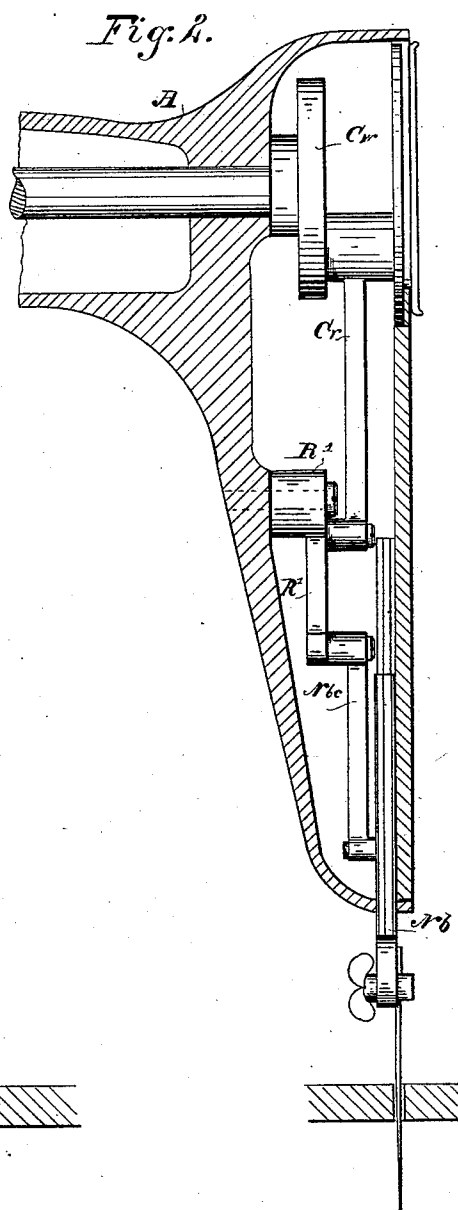
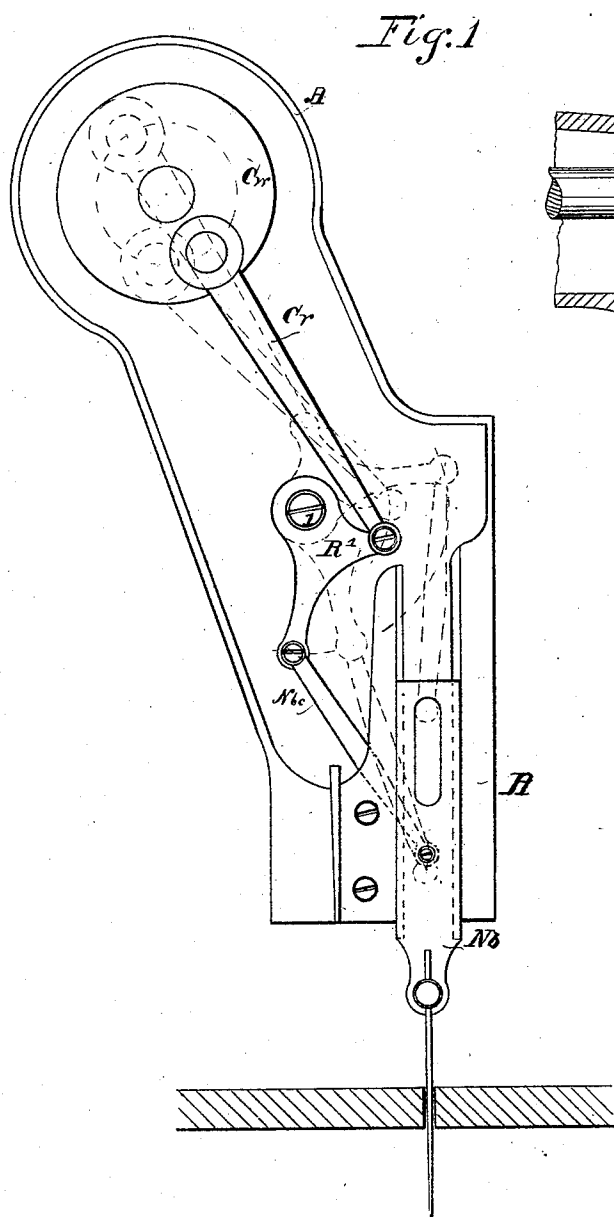


(No Model.)

J. J. WHEAT.
SEWING MACHINE.

No. 285,536.

Patented Sept. 25, 1883.



WITNESSES.

Jacob W. Soeper
Charles L. Spritz.

INVENTOR.

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att'y.

UNITED STATES PATENT OFFICE.

JOHN J. WHEAT, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO CHARLES LILLY, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 285,536, dated September 25, 1883.

Application filed March 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. WHEAT, of Indianapolis, Indiana, have invented a new and useful Improvement in Needle-Bar Move-
5 ments for Sewing-Machines, of which the following is a description, reference being made to the accompanying drawings, in the several figures of which like letters indicate like parts.

My invention relates to an improved method
10 of connecting the needle-bar of a sewing-machine with the actuating mechanism, and in such a manner that a short needle-bar can be used, and will be readily understood from what follows.

15 In the drawings, Figure 1 is a view of my device in front elevation with the face-plate removed, showing the needle-bar in the guides and the connection of the bar to the actuating mechanism. The dotted lines indicate the positions of the various parts when the needle is
20 drawn up. Fig. 2 is a vertical section of the arm, showing the operating parts from a rear view.

In detail, A is the arm of the machine; Cw, a crank-wheel fixed upon the end of a revolving
25 shaft; Cr, a crank-rod working on a wrist-pin on the crank-wheel; R', a bell-crank lever, to the short arm of which the crank-rod Cr is connected, the bell-crank lever being pivoted
30 by a pivot, I, to the stationary arm at a point substantially midway between the crank-wheel and the bottom of the arm in order to effect the return movement of the needle-bar at the proper moment; and Nbc is a link connected at
35 its upper end to the long arm of the bell-crank and at its lower end to about the center of the needle-bar. The latter, as will be observed, is short and light, thus preventing friction and the wearing away in spots, and offering less
40 resistance than the long needle-bars commonly in use. Any lost motion in the needle-bar can be readily taken up by the adjustable guide and key shown in Fig. 1.

By pivoting my bell-crank lever at about
45 the center, vertically, of the stationary arm I am enabled to hold my needle longer at rest without increasing the diameter of the crank

at the driving-shaft than I could if the lever were pivoted higher up, and this longer rest is desirable when a long shuttle is used; and it is
50 this peculiar point of pivoting that enables me to use the short needle-bar with good results.

The operation of my device is as follows: Power being applied to the revolving-shaft, the crank-wheel Cw revolves, and the crank-
55 rod revolves also, its center pivot describing the circle indicated by the dotted lines on the crank-wheel. The short arm of the bell-crank is drawn upward in an arc indicated by the dotted lines, and the long arm describes a
60 larger arc upward, also indicated by a dotted line. This movement carries the needle-bar connection Nbc toward the needle-bar and upward, and as it approaches the inner line of the guide the needle-bar will then, and not
65 sooner, begin to lift, it being then at its lowest point of descent. This gives ample time for the shuttle to enter and pass through the loop of the upper thread. When the needle-bar is at its lowest point, the pivot that connects the
70 link with it will be at the place indicated by the small dotted circle in Fig. 1, thus dropping the needle-bar about three-sixteenths of an inch below the position therein indicated.

What I claim, and desire to secure by Letters Patent, is the following:

The needle-bar movement herein described, consisting of the combination and arrangement of a crank-rod connected at its upper
80 end to a crank-wheel driven by a revolving shaft and at its lower end to the short arm of a bell-crank lever pivoted to the stationary arm at a point substantially midway between the revolving shaft and the lower end of the
85 arm, the long arm of the bell-crank lever connected by a link to the central part of a short needle-bar, substantially as and for the purpose described.

In witness whereof I have hereto set my hand this 16th day of March, 1883.

JOHN J. WHEAT.

Witnesses:

C. P. JACOBS,
C. S. SPRITZ.